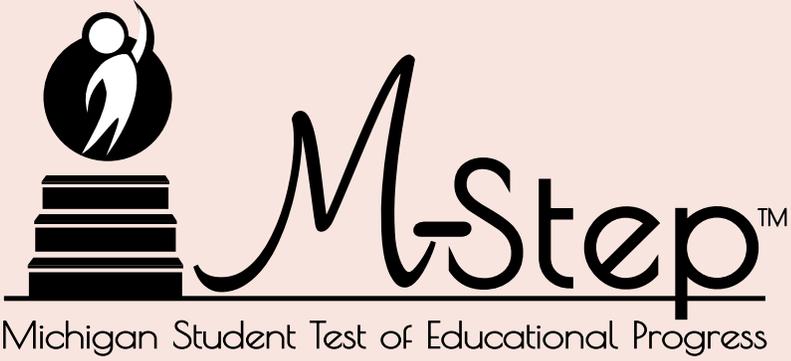


Student Name \_\_\_\_\_



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Sample Items



Grade  
**5**  
Form  
**S**

**MATHEMATICS**  
*Spring 2015*

**MICHIGAN STATE BOARD OF EDUCATION**  
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The sample items included in this set can be used by students and teachers to become familiar with the kinds of items students will encounter on the paper/pencil summative assessments. The sample items demonstrate the rigor of Michigan's academic content standards. They are not to be interpreted as indicative of the focus of the M-STEP assessments; they are simply a collection of item samples. Every standard is not included in this sample set.

1. Which number is equal to  $10^4$ ?

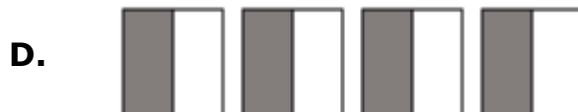
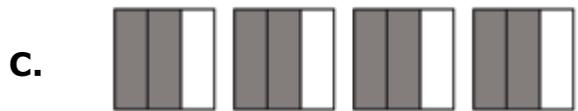
- A. 100
- B. 1,000
- C. 10,000
- D. 100,000

2. Enter the quotient.

$$3,125 \div 25$$

0	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9

3. Which fraction model best represents  $4 \times \frac{2}{3}$ ?

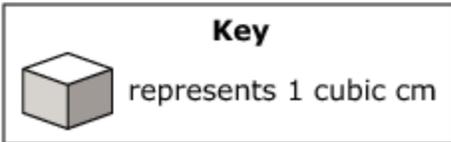
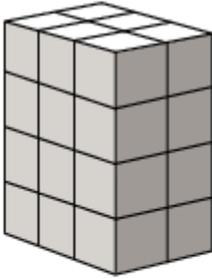


4. Conner is buying tickets to a concert. The concert he and his friends want to see costs \$4.75 per ticket. Connor has \$26.00 total.

What is the **greatest** number of tickets Connor can buy?

- A. 4
- B. 5
- C. 6
- D. 7

5. The rectangular prism shown has 4 layers with 6 cubes in each layer.



Enter the volume, in cubic centimeters, of the rectangular prism.

0	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9

**M-STEP Grade 5 MATHEMATICS Sample**

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- 6.** Tyler is 8 years old. His sister Olivia is 4 years less than twice his age. Write a numerical expression for Olivia's age in the box below.

- 7.** Write one number in each box to create a fraction that correctly completes each statement.

**A.**  $4 \times \frac{\square}{\square} < 4$

**B.**  $4 \times \frac{\square}{\square} = 4$

**C.**  $4 \times \frac{\square}{\square} > 4$

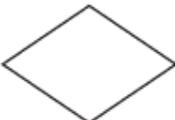
**M-STEP Grade 5 MATHEMATICS Sample**

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**8.** Select two fractions that can be rewritten with a denominator of 24.

- A.  $\frac{1}{6}$
- B.  $\frac{1}{5}$
- C.  $\frac{5}{7}$
- D.  $\frac{9}{10}$
- E.  $\frac{1}{9}$
- F.  $\frac{7}{8}$

**9.** All parallelograms have opposite sides that are equal in length and parallel. Determine whether each polygon shown is also a parallelogram. Select Yes or No for each polygon.

	<b>Yes</b>	<b>No</b>
 Rectangle	<input type="checkbox"/>	<input type="checkbox"/>
 Trapezoid	<input type="checkbox"/>	<input type="checkbox"/>
 Rhombus	<input type="checkbox"/>	<input type="checkbox"/>

- 10.** Lola has 4 orange juice containers. Each container is  $\frac{5}{8}$  full. Lola claims to have a total of  $2\frac{1}{2}$  gallons of orange juice in the 4 containers.

Which of these statements must be true in order for Lola's claim to be correct?

- A.** Each container has a capacity of  $\frac{5}{8}$  gallon.
  - B.** Each container has a capacity of 1 gallon.
  - C.** Each container has a capacity of  $2\frac{1}{2}$  gallons.
  - D.** Each container has a capacity of 8 gallons.
- 11.** Ryan has  $\frac{1}{2}$  pound of chocolate. He divides it into 4 equal portions. Write the amount of chocolate, in pounds, in each portion in the box below.

**12.** Select **all** expressions that are equal to  $3\frac{1}{4}$ .

**A.**  $26 \times \frac{1}{8}$

**B.**  $2\frac{1}{8} \times 2$

**C.**  $4 \times 13$

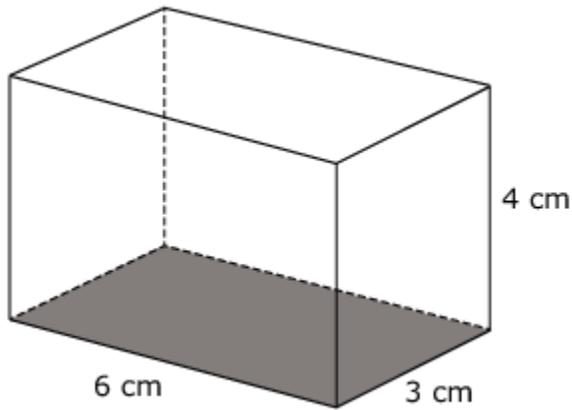
**D.**  $\frac{1}{4} \times 3$

**E.**  $13 \times \frac{1}{4}$

**M-STEP Grade 5 MATHEMATICS Sample**

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- 13.** The right rectangular prism shown has a length of 6 centimeters, width of 3 centimeters, and height of 4 centimeters.



Determine whether each equation can be used to find the volume ( $V$ ) of this prism. Select Yes or No for each equation.

	<b>Yes</b>	<b>No</b>
$V = 18 \times 4$	<input type="checkbox"/>	<input type="checkbox"/>
$V = (6 + 3) \times 4$	<input type="checkbox"/>	<input type="checkbox"/>
$V = 6 \times 3 \times 4$	<input type="checkbox"/>	<input type="checkbox"/>
$V = 9 \times 4$	<input type="checkbox"/>	<input type="checkbox"/>

**Answer Key**

- 1.** C
- 2.** 125
- 3.** C
- 4.** B
- 5.**  $24 \text{ cm}^3$
- 6.**  $2 \bullet 8 - 4$  or 12
- 7.** e.g.,  $\frac{1}{2}$ ,  $\frac{1}{1}$ ,  $\frac{2}{1}$
- 8.**  $\frac{1}{6}$ ,  $\frac{7}{8}$
- 9.** Yes, No, Yes
- 10.** B
- 11.**  $\frac{1}{8} \text{ lb}$
- 12.**  $26 \times \frac{1}{8}$ ,  $13 \times \frac{1}{4}$
- 13.** Yes, No, Yes, No

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